REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 18 and 32 are amended. Claims 1-32 are pending.

I. Rejection under 35 U.S.C. § 103

In the Office Action, at page 2, numbered paragraph 2, claims 1-6, 8 and 18-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,765,200 to McIlvain et al. in view of U.S. Patent Publication No. 2005/0244138 to O'Connor et al. This rejection is respectfully traversed because the combination of the teachings of McIlvain and O'Connor does not suggest:

> sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area, based on the control information when a time-delayed viewing mode is selected,

as recited in independent claim 1.

McIlvain does not discuss or suggest that free blocks are sequentially assigned as discontinuous circular buffer blocks. McIlvain merely discusses that a storage device includes data sets with logical positions that may represent a block on the storage device. McIlvain does not make any mention of assigning free blocks as discontinuous circular buffer blocks in a recording area. While McIlvain discusses that the storage device 200 includes plural data sets 202 each including plural logical positions 204 and that the logical positions 204 can receive data, McIlvain does not discuss or suggest sequentially assigning free blocks as discontinuous circular buffer blocks. McIlvain does not identify free blocks, does not discuss sequentially assigning free blocks, and does not suggest that free blocks are sequentially assigned as **discontinuous** circular buffer blocks. McIlvain does not address assigning free blocks as discontinuous circular buffer blocks.

Further, although the Examiner previously indicated that "discontinuous" circular buffer is being interpreted to mean sectors on a hard disk, sectors on a hard disk, in accordance with their typical meaning to one of ordinary skill in the art cannot be interpreted to be discontinuous circular buffer blocks as sectors adjacent to one another are not discontinuous with respect to one another. Sectors that are not adjacent to each other can be considered to be discontinuous, but McIlvain fails to address this feature. Merely saving data to different sectors of a hard disk does not satisfy the feature of sequentially assigning free blocks as discontinuous circular buffer

blocks. As McIlvain entirely fails to address identifying free blocks, and entirely fails to address assigning free blocks as discontinuous buffer blocks, it is unclear as to how McIlvain can teach sequentially assigning free blocks as discontinuous circular buffer blocks.

McIlvain does not show, discuss or suggest, specifically at col. 5, lines 20-35, as cited by the Examiner, a recording medium including a video stream storing area and a control information area, in which the video stream storing area includes discontinuously arranged video stream blocks. As shown in Fig. 2 of McIlvain, logical positions 204 are specifically arranged continuously in a disk recording area and are formed as a circular buffer, the circular buffer being, for example, one of the data sets 202.

In addition, as conceded by the Examiner, McIlvain does not discuss or suggest sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area, based on the control information when a time-delayed viewing mode is selected. The Examiner indicates that O'Connor makes up for the deficiencies in McIlvain, alleging that "it would have been obvious to one of ordinary skill in the art at the time of the invention to use the video stream processing system, as disclosed by McIlvain et al and further incorporate a system that records to free blocks based on control information, as disclosed by O'Connor et al." The Applicant respectfully disagrees.

First, *KSR Int'l Co. v. Teleflex, Inc.*, requires that the Examiner establish "an apparent reason to combine...known elements" and must expressly articulate the underlying rational for this "apparent reason." Further, *KSR* requires that it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements." *See* KSR Int'l Co. v. Teleflex, Inc. Therefore, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed.

Here, the Examiner has failed to properly disclose an apparent reason or motivation to combine the teachings of McIlvain and O'Connor, specifically as to how one of ordinary skill in the art would have been led to combine the teachings of McIlvain and O'Connor to suggest sequentially assigning free blocks as discontinuous circular buffer blocks based on control information when a time-delayed viewing mode is selected. The Examiner fails to establish why a time-delayed viewing mode would result in sequentially assigning free blocks as discontinuous circular buffer blocks.

O'Connor discusses a time-delayed viewing mode in which a video stream is stored on a hard disk and as newer portions of the video stream are received, they overwrite the older

portions of the video stream that are saved in a random access storage unit. O'Connor further discusses that the temporary buffering of the video stream acts as a circular buffer. However, O'Connor does not suggest why one would sequentially assign free blocks as discontinuous circular buffer blocks based on control information when a time-delayed viewing mode is selected.

Further, while O'Connor discusses storing data in a time-delayed viewing mode, O'Connor does not particularly discuss or suggest storing the data based on control information. Fig. 14 shows and O'Connor discusses that the digitized video 1402 is stored in memory buffer 1404, and as buffer 1404 fills up, the buffer 1408 moves to the top of the stack and incoming video is stored in buffer 1408. Thus, while the video is stored to the buffers based on whether or not the top buffer is full, the video in O'Connor is not stored based on control information. Further, O'Connor does not suggest sequentially assigning the data in a discontinuous circular buffer block based on control information as to a time-delayed viewing mode.

In contrast, the present invention discusses that the recording medium includes a control information area that stores file attribute information, file assignment information, free block information for each track or cylinder, and circular buffer block information. O'Connor does not suggest that information such as file attribute information, for example, is used to store the video data.

Again, as cited in numerous responses, M.P.E.P. § 2142 requires that rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. The Examiner has failed to establish an articulated reasoning with rational underpinning to support the legal conclusion of obviousness. Merely disclosing that it would have been obvious to use a system of McIlvain with a system of O'Connor **does not suggest how or why one of ordinary skill in the art *would have been led to combine* the references in the manner suggested by the claims**. In particular, for example, the Examiner has failed to address **why** a time-delayed viewing mode of O'Connor would necessarily require sequentially assigning free blocks as discontinuous circular buffer blocks.

Therefore, as the combination of the teachings of McIlvain and O'Connor does not suggest "sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area, based on the control information when a time-delayed viewing mode is selected," as recited in independent claim 1, and as there is **no** motivation or apparent reason

cited to combine the references, claim 1 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Further, the combination of the teachings of McIlvain and O'Connor does not suggest "a video stream storing area which records video streams, wherein the video stream storing area comprises video stream blocks which are arranged discontinuously; and a control information area which stores control information relating to the video stream storing area, wherein the video stream blocks are arranged discontinuously based on the control information stored in the control information area," as recited in amended independent claim 18. Also, there is **no** motivation or apparent reason cited to combine the references. Therefore, claim 18 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 2-6, 8 and 19-20 depend either directly or indirectly from independent claims 1 and 18 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 2 recites "updating the control information and setting a pointer of a write point to a last one of the assigned circular buffer blocks after the recording of the video streams." Therefore, claims 2-6, 8 and 19-20 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

In the Office Action, at page 6, numbered paragraph 3, claims 21, 23-26, and 28-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,009,231 to Aoki et al. in view of U.S. Patent No. 6,233,389 to Barton et al. in further view of O'Connor. This rejection is respectfully traversed because the combination of the teachings of Aoki, Barton and O'Connor does not suggest:

> a controller which sequentially assigns free blocks as discontinuous circular buffer blocks on the recording medium, based upon the control information in response to a time-delayed viewing mode being selected, and which records video streams for time-delayed viewing in the assigned circular buffer blocks,

as recited in independent claim 21.

Aoki, specifically in the section cited by the Examiner at col. 7 line 59 – col. 8, line 34, merely discusses that data is stored in a circular buffer and that the stored data may be retrieved in a first and a second direction, allowing for reverse reproduction.

Aoki does not discuss or suggest sequentially assigning free blocks as discontinuous circular buffer blocks, specifically based on control information as to a time-delayed viewing

mode. First, Aoki does not discuss identifying free blocks, thus it is entirely unclear as to how Aoki can discuss or suggest sequentially assigning free blocks as discontinuous circular buffer blocks. Again, merely storing data in a circular buffer is not assigning free blocks as **discontinuous** circular buffer blocks. Storing data in a circular buffer is not assigning free blocks as discontinuous circular buffer blocks and is not sequentially assigning the free blocks.

The Examiner concedes that Aoki does not suggest assigning free blocks in a circular buffer based on control information when a time-delayed viewing mode is selected, but indicates that Barton and O'Connor make up for the deficiencies in Aoki. The Applicant respectfully disagrees.

Barton discusses a system in which multimedia data is stored and replayed, based on inputted control commands from a user. A video component is placed in a circular video buffer and an event is posted in the event buffer containing an indication that a video component was found and the location of the video component in the circular video buffer.

Barton does not, however, suggest sequentially assign free blocks as discontinuous circular buffer blocks and does not suggest that the free blocks are assigned as discontinuous circular buffer blocks based on the control information when a time-delayed viewing mode is selected. Barton discusses only that the event is posted in the event buffer, but does not suggest that the free blocks are sequentially assigned as discontinuous circular buffer blocks based on the control information when a time-delayed viewing mode is selected. Barton discusses that the user may store selected television broadcast problems while the user is watching or reviewing another program, but Barton does not suggest assigning free blocks as discontinuous circular buffer blocks when a time-delayed viewing mode is selected. The present invention allows a recording mode or reproduction mode to be performed simultaneously with a time-delayed viewing mode.

Further, despite the fact that the combination of Aoki and Barton fails to suggest all the features of independent claim 21, there is no motivation cited whatsoever to combine Aoki and Barton to suggest all the features of independent claim 21, as is required in establishing a *prima facie* case of obviousness. An apparent reason or a motivation is required is asserting a *prima facie* case of obviousness, and the Examiner has failed to provide a motivation, stating only that it would have been obvious to use the video stream processing system of Aoki and incorporate a system that records on control information of Barton. Merely combining two references without an apparent reason or requisite motivation does not adequately establish a *prima facie* case of obviousness.

In addition, the Examiner concedes that Aoki and Barton do not suggest "the randomly assigning and recording of blocks on the recording medium based on information sent by the user." Although claim 21 does not particularly disclose this recitation, the Applicant assumes that the Examiner is alleging that O'Connor makes up for the deficiency as to assigning free blocks based upon the control information in response to a time-delayed viewing mode being selected. As discussed above, O'Connor does not particularly discuss or suggest storing the data based on control information.

Further, there is no indication at all as to how the time-delayed viewing mode of O'Connor would be incorporated into the combination system of Aoki and Barton or how control information of a time-delayed viewing mode would particularly be used to sequentially assign free blocks as discontinuous circular buffer blocks.

In addition, the Examiner alleges only that "it would have been obvious to one of ordinary skill in the art at the time of the invention to use the video stream processing system, as disclosed by Aoki et al in view of Barton, and further incorporate a system that records to free blocks based on user control information, as disclosed by O'Connor et al." Again, there is no cited apparent reason or motivation to combine the teachings of Aoki, Barton and O'Connor.

Therefore, as the combination of the teachings of Aoki, Barton and O'Connor does not suggest "a controller which sequentially assigns free blocks as discontinuous circular buffer blocks on the recording medium, based upon the control information in response to a time-delayed viewing mode being selected, and which records video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in independent claim 21, and as there is **no** apparent reason or motivation cited to combine the references, claim 21 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Further, the combination of the teachings of Aoki, Barton and O'Connor does not suggest "a controller which records a video stream in free blocks of the recording medium or reads a recorded video stream recorded on the recording medium and assigns free blocks nearest to the recorded or reproduced free blocks as circular buffer blocks based on the control information," as recited in amended independent claim 32. In addition, there is **no** apparent reason or motivation cited to combine the references. Therefore, claim 32 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 23-26 and 28-31 depend either directly or indirectly from independent claim 21 and include all the features of independent claim 21, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 25 recites that "the controller updates the control information and sets a pointer of a write point to a last one of the assigned circular buffer blocks after recording the video streams." Therefore, claims 23-26 and 28-31 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

In the Office Action, at page 10, numbered paragraph 4, claims 7 and 9-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over McIlvain in view of O'Connor and further in view of Aoki. This rejection is respectfully traversed because the combination of the teachings of McIlvain, O'Connor and Aoki does not suggest:

> sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; and
>
> assigning free blocks of the disk recording area and recording video streams of a channel to be recorded in the assigned free blocks when a recording mode is selected during the time-delayed viewing mode, assigning free blocks nearest to the recorded free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks,

as recited in independent claim 9.

As discussed above with respect to independent claim 1, McIlvain does not discuss or suggest sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area, and does not suggest that the assignment is based on the control information and that video streams are recorded for time-delayed viewing in the assigned circular buffer blocks. Further, as conceded by the Examiner, McIlvain in view of O'Connor does not suggest "that if the video streams are of different channels to be recorded concurrently." The Applicants are entirely unclear as to what the Examiner references.

Neither McIlvain nor O'Connor discuss assigning free blocks of the disk recording area and recording video streams of a channel to be recorded in the assigned free blocks when a recording mode is selected during the time-delayed viewing mode, assigning free blocks nearest to the recorded free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks. Neither McIlvain nor O'Connor make any distinction between recording video steams in assigned free blocks when a recording

mode is selected during a time-delayed viewing mode and do not at all reference assigning free blocks **nearest to the recorded free blocks** as the circular buffer blocks. The Examiner indicates that Aoki makes up for some deficiencies in McIlvain and O'Connor. As discussed above, merely storing data in a ring buffer does not suggest sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area. Further, Aoki fails to make up for the deficiencies in McIlvain and O'Connor with respect to assigning free blocks of the disk recording area and recording video streams of a channel to be recorded in the assigned free blocks when a recording mode is selected during the time-delayed viewing mode and assigning free blocks nearest to the recorded free blocks as the circular buffer blocks.

In addition, the Examiner alleges that "it would have been obvious to one of ordinary skill in the art at the time of the invention to use a video stream processing method, as disclosed by McIlvain et al, and further incorporate a system wherein the video streams are different broadcast channels being entered into the system, as disclosed by Aoki et al." Again, the Examiner has provided no apparent reason or motivation to suggest combining McIlvain and Aoki, and in addition, does not address or discuss combining Barton. Therefore, **the Examiner has again failed to establish a *prima facie* case of obviousness**. The Examiner is again directed to M.P.E.P. § 2142.

Therefore, as the combination of the teachings of McIlvain, O'Connor and Aoki does not suggest "sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; and assigning free blocks of the disk recording area and recording video streams of a channel to be recorded in the assigned free blocks when a recording mode is selected during the time-delayed viewing mode, assigning free blocks nearest to the recorded free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in independent claim 9, and as there is no motivation or apparent reason provided to suggest combining the teachings of the references, claim 9 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Further, the combination of the teachings of McIlvain, O'Connor and Aoki does not suggest "sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected;

assigning free blocks of the disk recording area, recording video streams of a channel to be recorded in the assigned free blocks, assigning free blocks nearest to the recorded free blocks as the circular buffer blocks, and recording video streams for time-delayed viewing in the assigned circular buffer blocks, when a recording mode is selected together with the time-delayed viewing mode; and reading free blocks to be reproduced based on the control information, assigning free blocks nearest to the reproduced free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks, when a reproduction mode is selected together with the time-delayed viewing mode," as recited in independent claim 12. Also, there is no motivation or apparent reason provided to suggest combining the teachings of the references. Therefore, claim 12 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

In addition, the combination of the teachings of McIlvain, O'Connor and Aoki does not suggest "sequentially assigning free blocks as discontinuous circular buffer blocks in a disk recording area and recording video streams for time-delayed viewing in the assigned circular buffer blocks, based on the control information when a time-delayed viewing mode is selected; and reading blocks to be reproduced based on the control information, assigning free blocks nearest to the reproduced free blocks as the circular buffer blocks, and recording the video streams for time-delayed viewing in the assigned circular buffer blocks, when a reproduction mode is selected together with the time-delayed viewing mode," as recited in independent claim 14. Also, there is no motivation or apparent reason provided to suggest combining the teachings of the references. Therefore, claim 14 patentably distinguishes over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

As to claims 15-17, the combination of the teachings of McIlvain, O'Connor and Aoki does not suggest a stream processing method in a broadcast receiving system for time-delayed viewing that includes a disk drive having control information required for recording an input signal and reproducing recorded information in a predetermined area, and does not discuss or suggest "assigning free blocks of a recording disk area; recording video streams of a channel to be recorded in the assigned free blocks; assigning free blocks nearest to the recorded free blocks as circular buffer blocks; and recording the video streams for time-delayed viewing in the assigned circular buffer blocks," as recited in independent claim 15and similarly in claims 16 and 17. Also, there is no motivation or apparent reason provided to suggest combining the teachings of the references. Therefore, claims 15-17 patentably distinguish over the references relied upon. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 7, 10, 11 and 13 depend either directly or indirectly from independent claims 1, 9 and 12 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 7 recites that "the sequentially assigning free blocks comprises interleavedly assigning the free blocks for each video stream, if the video streams are of different channels to be recorded concurrently." Therefore, claims 7, 10, 11 and 13 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

In the Office Action, at page 12, numbered paragraph 6, claims 22 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Aoki in view of Barton in further view of U.S. Patent No. 5,884,284 to Peters et al. This rejection is respectfully traversed.

As discussed above with respect to independent claim 21, Aoki does not discuss or suggest "a controller which sequentially assigns free blocks as discontinuous circular buffer blocks on the recording medium, based upon the control information in response to a time-delayed viewing mode being selected, and which records video streams for time-delayed viewing in the assigned circular buffer blocks." Barton and Peters fails to make up for the deficiency in Aoki. Specifically, Peters discusses a telecommunication user account system and method that creates, maintains, processes and analyzes data regarding individual users for telecommunications services, but does not discuss or suggest the deficiency in Aoki, namely sequentially assigning free blocks as discontinuous circular buffer blocks based on control information in response to a time-delayed viewing mode selected and recording video streams for time-delayed viewing in the assigned buffer blocks. In addition, there is no adequate motivation cited to combine Aoki and Peters to teach all the claimed features of independent claim 21, as it is unclear how the motivation of allowing "for more information to be transmitted and entered into the system" is an adequate motivation to suggest combining the teachings of the references.

Therefore, independent claim 21 patentably distinguishes over the reference relied upon. Claims 22 and 27 depend either directly or indirectly from claim 21 and include all the features of claim 21, plus additional features that are not discussed or suggested by the references relied upon. For example, claim 27 recites "a read-only memory which stores control program data to control the random access memory and the hard disk drive; and a second random access memory which temporarily stores data during a control operation of the controller." Therefore,

claims 22 and 27 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

Conclusion

In accordance with the foregoing, claims 18 and 32 have been amended. Claims 1-32 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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